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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,404	11/29/2001	Padmanabhan Sreenivasan	499.074US2	3328
21186 7590 05/03/2007 SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402				
			EXAMINER AVELLINO, JOSEPH E	
			ART UNIT 2143	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/997,404

Applicant(s)

SREENIVASAN ET AL.

Examiner

Joseph E. Avellino

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-12 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/2/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 4, 5, 7-12, and 14-19 are pending in this application.

Information Disclosure Statement

1. The IDS dated April 2, 2007 has been considered. See PTO-1449.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1, 2, 4, 5, 7-12, and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,189,111) (hereinafter Alexander) in view of Le et al. (US 6,145,089) (hereinafter Le) in view of Chao et al. (USPN 6,438,705) (hereinafter Chao).

Alexander taught a method and system to enhance survivability of system software components, even in the event of catastrophic failure of the computing element on which they reside. See abstract.

Regarding claim 1, Alexander taught a system for implementing a failover policy comprising: a cluster infrastructure for managing a plurality of nodes; a high availability infrastructure for providing group and cluster membership services (cluster membership service or CLMS) (**column 5 lines 35-40**); and a high availability script execution

component (i.e. routine execution mechanism) (col. 6, lines 40-50) operative to execute computer code and receiving at least one failover attribute (failing node information and harvested data)

Alexander teachings are further operative to produce a runtime failover domain from an initial failover domain (recognizing the failing node and removing it from the bitmap) **(column 5 lines 40-50, column 6 lines 19-21, column 8 lines 40-42, column 9 lines 32-33)**. Note that Alexander teaching describe producing a failover domain when a failing node is recognized and a notification is send to the other nodes which represents a failover domain that by definition is the area of control to which the system will automatically transfer activity to a standby server upon failure of an active server.

Alexander did not specifically state that upon the detection of a failover event, executing a failover script comprising a set of one or more commands. In analogous art, Le discloses another system for implementing a failover policy which, upon the detection of a failover event, executing a failover script which includes a response to a service failure (col. 4, lines 37-60; col. 5, lines 53-67; Figure 4, ref. 450). It would have been obvious to one of ordinary skill in the art to combine the teaching of Le with Alexander in order to provide a high availability service process which provides services without requiring duplication of services as supported by Le (col. 1, lines 27-30).

Alexander in view of Le did not specifically disclose executing one or more action scripts in order to cause the resources to failover to the runtime domain. In analogous art, Chao discloses executing action scripts (i.e. node_down event) which causes the resources to failover to the runtime domain (i.e. the resources are restarted on the

next_node, which is determined based on the preferred node to run the resource group based on node status, group preferred node list, and failover policy) (Figures 4, 4a, 4b; col. 16, lines 7-50). It would have been obvious to one of ordinary skill in the art to combine the teaching of Chao with Alexander and Le in order to allow support of a failover from one node to another in a multicluster environment as supported by Chao (col. 5, lines 14-18).

Alexander modified by Le and Chao is hereinafter referenced to as 'the first combination'.

Regarding claim 2, the first combination further taught a method for determining a target node for a failover, comprising: executing a failover script, said script producing a failover domain, said failover domain having an ordered list of nodes (**column 5 lines 40-47, fig. 3 and column 9 lines 40-53 [ordered list of nodes]**); receiving a failover attribute (**column 5 lines 54-65**); and based on the failover attribute and failover domain selecting a node upon which to locate a resource (**column 5 lines 50-52, column 9 lines 26-39 and column 10 lines 48-57**).

Regarding claims 3 and 13, it is understood that in the first combination (Alexander: column 5, lines 40-47) an initial domain exist and is represented by "each of the other nodes". Further, when a node fails to respond the rest of the nodes are notified (Alexander: column 5 lines 47-50) and when the failed node is removed from

the map and as per the described action, it is understood that a failover domain is effectively produced (Alexander: column 6 lines 54-56, column 8 lines 40-42, column 9 lines 32-33).

Regarding claim 4, the first combination further taught defining a resource group (Alexander: column 6 lines 54-56); and associating the failover script and the failover attribute with the resource group (Alexander: column 6 lines 56-63).

Regarding claim 5, the first combination taught the use of table to determine a non-failed node capable of harvesting data from a failed node. It is well known in the art of computer networks that files or tables are read in sequence or by an index and using the first node found in the table would be the conventional way to select a non-failed node (Alexander: column 6, lines 54-63) from a table.

Regarding claim 6, the first combination taught that the table is used either by the failed node performing active harvesting or by the non-failed node performing passive harvest (Alexander: column 6, lines 60-63) , which is commensurate with executing an action script (Cluster Manager component (Regroup) or Harvest processes) for a target node.

Regarding claim 7, the first combination further taught action scripts verifying resources and resources configuration on a node (Alexander: column 9 lines 18-25) in the form of ASSERT macros that perform consistency checks and can be used on

candidates for harvesting; and can further be used by applications for validation purposes.

Regarding claims 8-10, the first combination taught that operating systems of the embodiments are capable of encountering errors or faults (Alexander: column 6, lines 5-7), and further taught macros that perform validations (Alexander: column 9 lines 18-25) as explained above in relation to claim 7, further services running in a distributed fashion are taught (Alexander: column 5, lines 35-38), in addition to other services (Alexander: column 10, lines 5-11). It is understood that the first combination taught or at least suggest, that applications can validate data structures (Alexander: column 9, lines 24-25) that are dependent on services/applications/resources (Alexander: column 10, lines 5-11) and that upon discovering a particular status an appropriate arbitrary action can be performed (Alexander: column 9, lines 18-23) and that such action can be a recovery attempt (Alexander: column 6, lines 5-7), which when refereeing to a running service/resource/application will be the arbitrary preferred command of stopping or starting such service/resource/application.

Regarding claims 11 and 12 Examiner takes Official Notice (see MPEP § 2144.03) that "the use of a shell script or a Perl script" in a computer-networking environment was well known in the art at the time the invention was made. The Applicant is entitled to traverse any/all official notice taken in this action according to MPEP § 2144.03. However, MPEP § 2144.03 further states "See also In re Boon, 439

F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice)." Specifically, In re Boon, 169 USPQ 231, 234 states "as we held in Ahlert, an applicant must be given the opportunity to challenge either the correctness of the fact asserted or the notoriety or repute of the reference cited in support of the assertion. We did not mean to imply by this statement that a bald challenge, with nothing more, would be all that was needed". Further note that 37 CFR § 1.671(c)(3) states "Judicial notice means official notice". Thus, a traversal by the Applicant that is merely "a bald challenge, with nothing more" will be given very little weight.

Referring to claim 14, Alexander discloses the failover event comprises failure of a node (col. 9, lines 30-35).

Referring to claim 16, Alexander discloses the failover event is a load-balancing event (the Office construes the term "load-balancing event" to be "any event which requires rebalancing of the incoming requests", by this rationale, a nodal failure would constitute a load-balancing event, since the other nodes would have to shoulder the burden for the failed node) (col. 9, lines 30-35).

Referring to claims 15 and 17, the combination describes the invention substantively as described in the claims above. The combination fails to disclose the

failover event is a load-balancing event in the absence of a node failure, however load balancing is a well known feature in resource allocation. By this rationale, "Official Notice" is taken that both the concepts and advantages of providing load balancing are well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the combination to incorporate load balancing in order to reduce congestion on overloaded servers, thereby providing a balanced load on the plurality of servers.

Referring to claim 18, the combination discloses the invention substantively as described in claim 3. Furthermore the combination discloses saving the run-time failover domain (i.e. the nodes which are not failed; "remove the failed node from the bitmap") (Alexander: col. 10, lines 48-57). Furthermore detecting a second failover event would be obvious to one of ordinary skill in the art since it would have been obvious to repeat the method multiple times for multiple effects. See *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8 (7th Cir. 1977). Furthermore the bitmap is used as input to the failover script to determine which node is available for harvesting. By this rationale, on the second failover event, the bitmap (with the failed node removed) will be used as input to the routine which determines which other node (which has not failed) is available to harvest the objects of the failed node.

Referring to claim 19, the combination discloses the resource includes an application and comprising an application plug-in (i.e. an interface utilized to

communicate with a user or client application) which provides a high-availability interface for the application (Alexander: col. 3, lines 8-20)

Response to Arguments

Applicant's arguments dated April 2, 2007 have been fully considered but are not persuasive.

In the remarks, Applicant argues, in substance, that (1) Alexander does not teach the removal of a node from the bitmap by a failover script, rather the rote removal of the node, (2) Le does not teach the use of a failover script, rather an action script as defined in the specification, (3) the ASSERT command of Alexander does not verify that the resource is configured on the target node.

As to point (1), The Examiner has already described that Alexander does not teach the use of a failover script, rather is using the Le and Chao reference to refute that particular limitation. Applicant's attention is directed to col. 10, lines 48-58 which clearly discloses that a failed node is removed from the bitmap. By this rationale, the rejection is maintained.

As to point (2), Applicant is incorrect. As defined in the specification, a "failover script" is "a shell script which generates a run-time failover domain" (Specification, page 9). An "action script" as defined in the specification is "a script that determines how a

resource is started, monitored, and stopped" which includes the scripts "start, stop, monitor, and restart" (Specification, pages 9-10). Applicant is misinterpreting the script file of Le, stating that it is an 'action script'. However this script includes a response to service failure and may *include scripts* to start, stop, and restart the device. Each of these commands (i.e. start, stop, and restart) are the *action scripts*. The only requirement of a failover script, as defined in the specification is that it is a shell script that generates a run-time failover domain. As evidenced by the rejection above. The script file 450 does exactly that (i.e. provide a response to service failure). It does not deal with the actual starting and restarting of services. That is left for the *action scripts* start, stop, and restart. By this rationale, the rejection is maintained.

As to point (3), Applicant is incorrect. Applicant failed to consider the next paragraph which states that "Applications can use all the same techniques *to validate its own data structures*" (col. 9, lines 24-25, emphasis added). This clearly teaches that the application is capable of verifying its own data structures, which would include the configuration on other devices. By this rationale, the rejection is maintained.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892 form.

Applicant has failed to seasonably challenge the Examiner's assertions of well known subject matter in the previous Office action(s) pursuant to the requirements set forth under MPEP §2144.03. A "seasonable challenge" is an explicit demand for evidence set forth by Applicant in the next response. Accordingly, the claim limitations the Examiner considered as "well known" in the previous Office action are now established as admitted prior art of record for the course of the prosecution. See *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943).

2. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

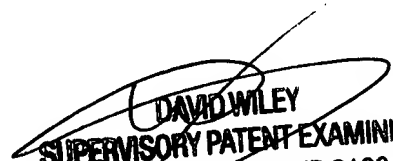
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph E. Avellino, Examiner
April 13, 2007



DAVID WILEY
SUPERVISORY PATENT EXAMINER
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